Localizer

Glideslope

Airspeed

JFK   4R   (at NARRO)

1 flt param
2 output
3 loc/gs
4 l/g setup
5 3D view
6 3D setup
7 reset
8 pause
9 score
10 setup
Esc exit
Prt sc

ATC® OPES™

Flight Simulator / Computer System Interface

The ATC® OPES™ (Objective Pilot Evaluation System) is a computer interface system for use with any currently available personal computer. Capable of monitoring and permanently recording any of 30 different pilot operations, the ATC® OPES™ represents state of the art in flight instruction/training equipment.

ATC® OPES™ provides not only traditional flight recording in the horizontal plane (x-y) but also provides tracking in the vertical plane (z) (See Figure 1). This feature will enable the instructor to monitor the students altitude holding ability, during the entire flight from takeoff to completion of landing. A hard copy print out is also available to provide a permanent record of the flight.
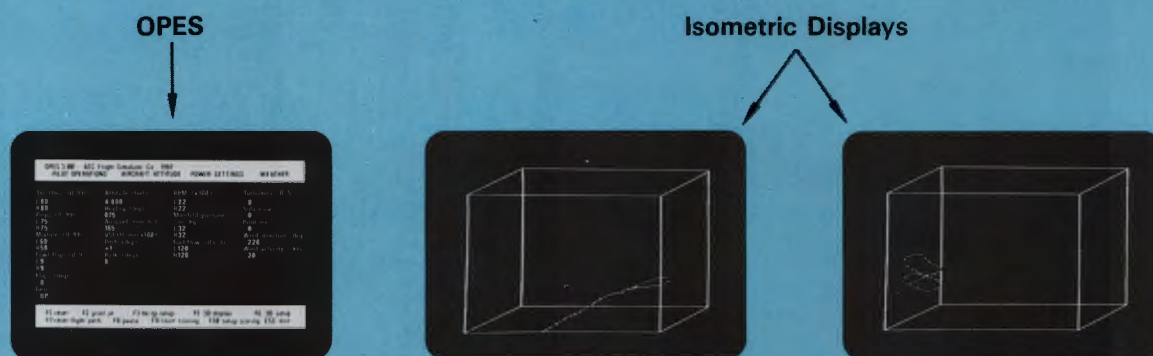
OPES   **Isometric Displays**

Figure 1

Every pilot operation, as well as every flight parameter, is displayed at the instructors station. From brake release and full power at takeoff to completion of landing the instructor will be provided with a real time readout and subsequent hard copy printout of the students actions. For instance: During takeoff; at what speed did the student rotate, and to what pitch attitude did he rotate, when did he retract the gear, what power settings did he use for climb, did he lean appropriately and at the correct time...

Every pilot operation, as well as the entire aircraft performance, are available for the instructor, either on the monitor or printer.

ATC® OPES™ provides a truly objective presentation of the student's flight performance for effective post flight debriefing.

The ATC® OPES™ was designed with the flight instructor in mind. No special computer language is necessary to talk to the computer. Each operation desired is presented on the monitor in a menu format and tells the operator what key(s) to press to attain the desired result. This simplistic design approach helps keep the flight instructor free to attend to his more important responsibility...flight instructing.

ATC® OPES™ provides the flight instructor with unprecedented capability for student flight performance evaluation. With the isometric flight display setup the instructor can select the exact viewing angle of any segment of the flight he may desire.

The instructor begins by selecting initialization at whatever altitude he desires through the floor altitude initialization mode. Several key punches are all that is required to set the floor altitude. Next the instructor can select the exact dimensions of the desired display area by entering the volume width and height initialization mode. Selection of each mode is entirely automatic. After
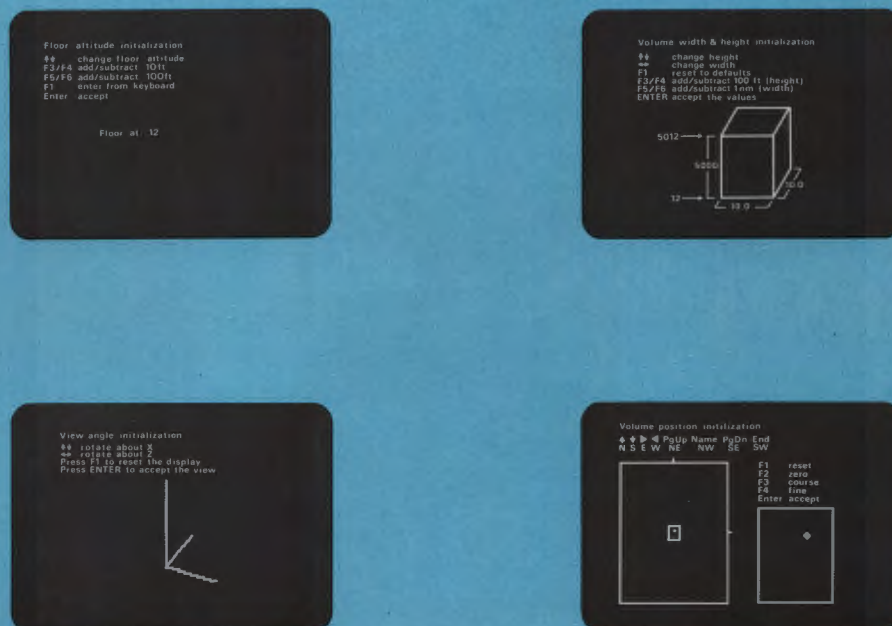
Isometric Display Set-Up

Figure 2

the dimensions of the display area are selected, the instructor can rotate this display to whatever angle he desires to make the students flight path easy to critique. After the display area and viewing angle have been chosen, the instructor lastly decides what part of the existing navigational area (determined by the navigational eprom in the simulator) he wishes to display. For example, if he wishes to display the initial and final approach segments, he will choose to position the display at an airport showing a significant area around the airport. If the instructor decides he wishes to display a holding pattern, he can position the display at or near the applicable navigation facility.

The entire isometric display set-up is practically automatic with a menu format for ease of operation by the flight instructor. Each display selected can also be printed out for post flight evaluation and permanent record. Figure 3 shows an example of the isometric display's final form with an ILS approach and missed approach holding pattern.

Perhaps the most important and most used portion of the ATC® OPES™ is the approach display. This display provides the same information that is shown in multi-million dollar flight simulators used by the airlines and military. This display mode shows the pilots performance when flying an ILS approach. Any deviation from the localizer, glide slope or assigned airspeed can clearly be
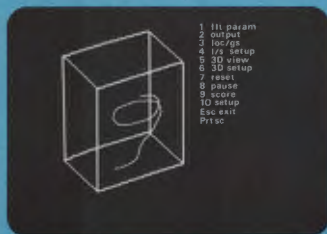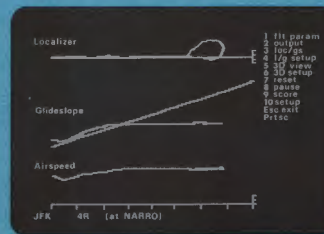

Figure 3

Figure 4

seen on this display. The instructor has complete control over setting any real world approach into the system. He can have the approach display begin at any point he desires and he can choose any scale he wishes. Effects of cross winds, turbulence, and even wind shear can be demonstrated and experienced first hand. Of course, as with all the other information the ATC® OPES™ provides, the approach display can be printed out or stored on a floppy disk for future reference.

Nifa Scoring

The ATC® OPES™ provides your instructor the ability to train his students according to the same exacting performance requirements used during the national intercollegiate flying association's annual competition. Students can become better pilots through this effective means of scoring each aspect of their flight. Values are assigned to heading, altitude, airspeed, bank angle and pitch altitude which provide a score for each flight. Students can now receive a grade even when the instructor is not present. Truly state-of-the-art flight training.

Figure 5

(Copy of computer printout)

	AIRCRAFT ATTITUDE				BANK		POWER INDICATION MP		RPM		F.F.		PILOT OPERATIONS		THR		PROP		MIX		COWL		WEATHER	ICING		WIND	
TIME	ALT	HDG	A/S	VSI	ANGLE	PITCH	L	R	L	R	L	R	FLAPS	GEAR	L	R	L	R	L	R	L	R	TURB	SURF	PITOT	VEL	HDG
0:12	126	66	0	0	0	+0	11	11	600	600	30	30	0	DOWN	15	17	99	99	99	99	99	0	0	0	0	05	140
0:18	126	66	41	0	0	+0	43	44	2500	2500	250	250	0	DOWN	99	99	99	99	99	99	99	0	0	0	0	05	140
0:24	126	66	89	0	0	+4	44	44	2500	2500	250	250	0	DOWN	99	99	99	99	99	99	99	0	0	0	0	05	140
0:31	145	66	109	950	2R	+9	43	44	2500	2500	250	250	0	DOWN	99	99	99	99	99	99	99	0	0	0	0	05	140
0:38	207	67	114	970	1R	+9	43	43	2500	2500	250	250	0	UP	99	99	99	99	99	99	99	0	0	0	0	05	140
0:43	260	66	121	960	1L	+9	38	38	2450	2400	180	180	0	UP	82	76	85	85	60	58	0	0	0	0	0	05	140
0:49	300	92	126	850	17R	+7	39	38	2400	2400	180	180	0	UP	77	76	85	86	60	58	0	0	0	0	0	05	140
0:55	385	96	124	850	16R	+7	39	38	2400	2400	180	180	0	UP	77	76	85	85	60	59	0	0	0	0	0	05	140
1:01	471	110	121	910	1R	+8	38	38	2400	2400	180	180	0	UP	77	76	85	86	60	58	0	0	0	0	0	05	140
1:07	565	110	129	950	0	+9	38	38	2400	2400	180	180	0	UP	77	76	85	86	60	58	0	0	0	0	0	05	140
1:13	666	111	116	970	0	+9	38	38	2400	2400	180	180	0	UP	77	76	85	86	60	58	0	0	0	0	0	05	140
1:19	761	110	112	980	0	+10	38	38	2400	2400	180	180	0	UP	77	76	85	86	60	59	0	0	0	0	0	05	140
1:24	848	109	119	970	2L	+9	38	38	2400	2400	180	180	0	UP	77	76	85	86	60	59	0	0	0	0	0	05	140

ATC® OPES™ provides real time monitoring and hard copy printout (See Figure 5) of the following pilot operations and flight parameters:

PILOT OPERATIONS

Throttle Lever Position
Prop Lever Position
Mixture Lever Position
Flap Position (degrees)
Cowl Flap Position
Landing Gear Position

Also:

Manifold Pressure (L&R in PSI)
RPM (L&R)
Fuel Flow (L&R in LBS/hr)

AIRCRAFT ATTITUDE

Heading
Altitude
Airspeed
VSI
Bank Angle
Pitch Attitude

WEATHER FACTORS

Wind Direction
Wind Velocity
Turbulance
Wing Icing
Pilot Icing

ENTIRE APPROACH DISPLAY:

Localizer
Glide Slope
Airspeed

The ATC® OPES™ is directly compatible with any IBM, Apple II, Apple II+, Apple IIc, or Franklin 1000 and 12000 computers.

The ATC® OPES™ can be purchased either by itself (simulator/computer interface and operating instructions) or ATC® can provide a complete personal computer system compatible with OPES™.
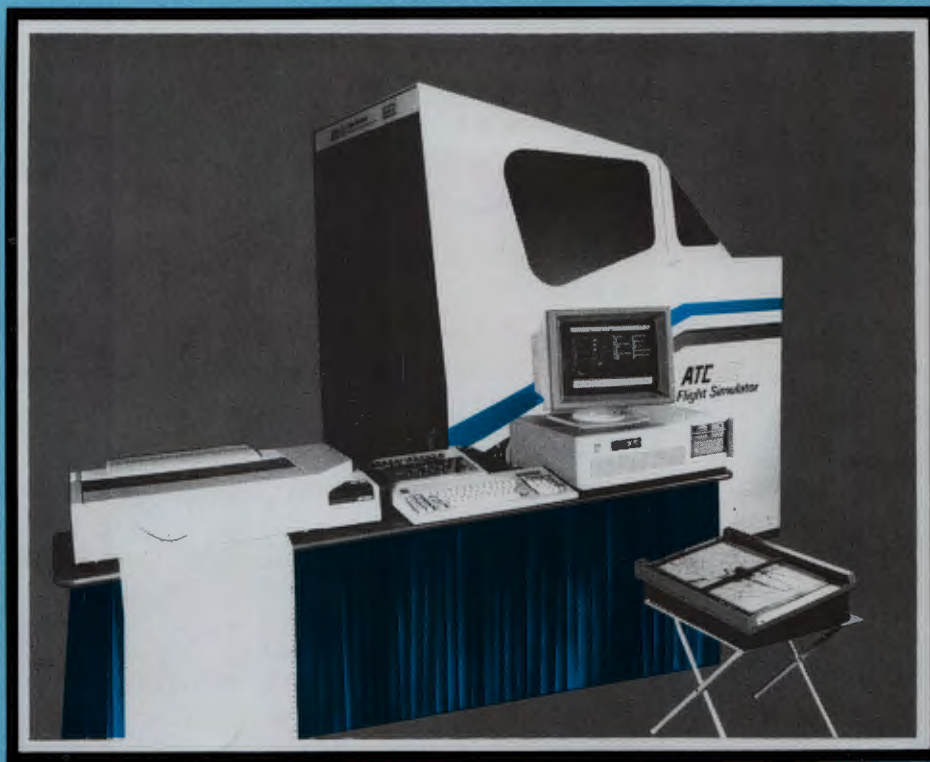
Call ATC® today to discuss how the ATC® OPES™ can expand the capabilities of your flight department through state-of-the-art technology.

ATC® Flight Simulator Co.

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